GLOSSARY

Air Quality Related Value (AQRV)- a feature or property of a class I, class II, or class III PSD area other than visibility that a state or Indian tribe finds may be affected by air pollution. General categories of air quality related values include odor, flora, fauna, soil, water, geologic features, and cultural resources.

Alkaline: A measure of carbonate accumulation indicated by a high pH.

Alluvium: Sediment deposited by running water.

Andesite: A volcanic rock composed of andesine.

Animal Unit Month (AUM): The number of animals times the number of months they graze. An "animal unit" is a cow with calf; other animals count as different numbers of animal units, e.g., five sheep with lambs' count as an animal unit. Number of AUMs is stipulated in grazing leases.

Argillite: A rock that is slightly harder than claystone and softer than shale.

Asset Management: The active management of the trust's assets under a portfolio management mandate for the purpose of increasing the portfolio's value. Synonymous with portfolio management.

Badlands: A region nearly devoid of vegetation where erosion has cut the land into an intricate maze of narrow ravines, sharp crests and pinnacles.

Bedrock: Solid rock exposed at the surface or covered with unconsolidated materials.

Best Management Practices (BMP): Voluntary guidelines prescribed as minimum water quality protection standards for forestry operations. BMPs, if properly designed and applied, can limit non-point pollution.

Biodiversity or Biological Diversity: The variety of life and its processes. It includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur (From Keystone Center 1991).

Cadastral: A graphic representation of land ownership and or title and associated <u>attributes</u>

Calcareous: Containing calcium carbonate.

CAMA: Computer Assisted Mass Appraisal – database maintained by the Montana Department of Revenue with residential and commercial property tax information

Categorical Exclusion: Categorical exclusion refers to a type of action that does not individually, collectively, or cumulative require an Environmental Assessment (EA) or Environmental Impact Statement (EIS), as determined by rulemaking or programmatic review.

Cirquelands: A deep, steep-walled recess in a mountain, caused by glacial erosion.

Claystone: Clay hardened into rock.

Climax Community: That point in the development of a biotic community when the changes that normally occur in ecological succession cease. The main biotic components are not overthrown by new invaders. No new species become dominant in the biotic community. The environmental conditions of the habitat are relatively stabilized. (After Woodbury 1954. In: Schwarz et al. 1976)

Coarse woody debris, down woody material: Dead woody material such as stems or limbs, generally lager than 3 inches diameter.

Commercial: A proposed land use category that includes retail businesses, offices (private and public), service establishments, resort recreation, communication sites, and other similar uses that may be recognized a "commercial" in local zoning regulations. In additions, "raw" or undeveloped properties might also be identified for their potential commercial use through a highest and best use analysis.

Conservation: A proposed land use category that generally includes lands that have been purchased or leased to secure long-term rights for open space, preservation of habitat, natural areas, or other conservation purposes.

Conservation Land: Includes Federally designated areas such as National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers, Wildlife and Game Refuges, and lands protected by either Public/Private Conservation Easements.

Crustose lichen: A non vascular plant appearing like a crust.

Developer: A private or public entity that assembles the necessary resources and conducts activities to facilitate changing uses on a particular tract or tract of land.

Digital Elevation Model: A digital representation of a continuous variable over a two- dimensional surface by a regular array of z values referenced to a common datum. Digital elevation models are typically used to represent terrain relief. Also referred to as 'digital terrain model' (DTM).

- 2. An elevation database for elevation data by map sheet from the National Mapping Division of the U.S. Geological Survey (USGS).
- 3. The format of the USGS digital elevation data sets.

Dolomite: A common rock-forming mineral.

Drainage Basin: the land drained by a river system. See watershed.

Early-successional species (Seral, or Early-seral, species): A plant species associated primarily with an early stage in the successional development of a biotic community.

Easement: A right created by grant, reservation, agreement, prescription, or necessary implication, which one has in the land of another.

Economic Analysis: A process by which an activity is evaluated in terms of its effects on the market in which it is located, typically measured in terms of jobs created, services required and financial impacts on the community

Economic Impacts: the effects that result from an economic activity including but limited to the creation of jobs, the derivation of tax revenue, the cost of providing services and infrastructure, and the impacts to the natural and socio-economic environment

Ecotone: A transition zone between two habitats or communities.

Enabling Act: The act by which land was granted by congress to the state and held in trust for the support of common schools.

Endangered Species: A plant or animal species whose prospects of survival and reproduction are in immediate jeopardy. Its peril may result from one or many changes: loss of habitat, overexploitation, predation, competition, disease, or even unknown reasons. An endangered species must have help, or extinction may follow. It must be designated in the Federal Register by the appropriate Secretary as an "endangered species." (Schwarz et al. 1976)

Endangered Species Act (ESA): the Act that required consultation with the Fish and Wildlife Service (Interior) if practices on National Forest System lands may impact a threatened or endangered species (plant or animal). Direction is found in FSM 2670.

Environmental Impact Statement (EIS): A document in which anticipated environmental effects of a planned course or action or development are evaluated. The Montana Environmental Policy Act (MEPA) requires that such statements be prepared first in draft and then in a final form. An EIS includes the following points: (1) the environmental impact of the proposed action, (2) any adverse impacts which cannot be avoided by the action, (3) the alternative courses of action, (4) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, (5) a description of the irreversible and irretrievable commitment of resources which would occur if the action were accomplished. (After Schwarz et al. 1976)

Environmental Quality Council (EQC): A 13 member legislative council that coordinates and monitors State policies and activities that affect the quality of the environment.

Entitlement: An improvement or action that increases the underlying value of the land to which it is applied. Entitlements may include the addition of physical infrastructure, land use designations and land use authorizations such as zoning

Forb: 1. Any herbaceous plant other than those in the Gramineae (true grasses), Cyperaceae (sedges) and Juncaceae (rushes) families—i.e., any non-grass-like plant having little or no woody material on it. (After Amer. Soc. Range Manage. 1964)

2. A palatable, broad-leaved, flowering herb whose stem, above ground, does not become woody and persistent. (Grim and Hill 19740 (Schwarz et al. 1976)

Forecasts: Predictions of future economic activity

Full-time Equivalents (FTE): A measure of number of personnel employed. One FTE is equal to one person working a 40-hour week.

Funnel Filter: A process to identify specific land tracts that may be suitable for residential, commercial, industrial, or conservation uses.

Geocode: The traditional definition is the process of identifying the coordinates of a location given its address. For example, an address can be matched against a TIGER street network to determine the location of a home. Also referred to as address geocoding. In the context of our use in this process it refers to the theoretically unique identifier for each parcel in the Montana Cadastral database.

Geographic data: The locations and descriptions of geographic features. The composite of spatial data and descriptive data.

Geographic database: A collection of spatial data and related descriptive data organized for efficient storage and retrieval by many users.

Geomorphic: Pertaining to the general configuration of the earth's surface.

GIS: Geographic information system. An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Glacial till: Unstratified glacial drift of clay, sand, and gravel, forming poor subsoil impervious to water.

Glacier, glacial, glaciated: A mass of ice that moves in a definite direction and formed by the compression of ice; features created by a glacier; terrain molded by a glacier.

Gneiss: A coarse grained rock in which bands of granular material alternate with bands of mica.

Grid: A geographic data model representing information as an array of equally sized square cells arranged in rows and columns. Each grid cell is referenced by its geographic x,y location. See also <u>raster</u> and <u>grid cell</u>.

Grid cell: A discretely uniform unit that represents a portion of the Earth, such as a square meter or square mile. Each grid cell has a value that corresponds to the feature or characteristic at that site, such as a soil type, census tract, or vegetation class.

Growth Policy: Growth policies (formerly known as comprehensive or master plans) provide overall guidance to local governments in the growth and development of their communities. The primary focus of growth policies is on land uses, both existing and projected.

Habitat Conservation Plan (HCP): The HCP will address those lands that provide habitat for species currently listed or those that could be listed under the Endangered Species Act (ESA). The HCP offsets harm caused by lawful activities, such as forest management practices, by promoting conservation measures to minimize or mitigate impacts to threatened and endangered species.

Hydrogeomorphology: The science relating to the geographical, geological and hydrological aspects of water bodies and changes to these in response to flow variations and to natural and human-caused events such as heavy rainfall or channel straightening.

Hydrology: A science dealing with the properties, distribution, and circulation of water, specifically the study of water on the surface of land, in the soil and underlying rocks, and in the atmosphere, with respect to evaporation and precipitation. (After Webster 1963 In: Schwarz et al. 1976)

ID Team: A team that meets annually to allocate budgets and prioritize projects identified in the Unit/Land offices.

Igneous rocks: Formed by the solidification of molten or partially molten rock.

Incidental Take Permit: ???? Do we need this???

Industrial: A proposed land use category that includes manufacturing, wholesaling, warehousing, utilities, heavy transportation, sanitary landfills, sewage treatment facilities, wind farms, feedlots, grain storage bins, irrigation facilities, reclamation projects, electrical substations, intermodal shipping facilities, and similar uses. In addition, "raw" or undeveloped properties might also be identified for their potential industrial use through a highest and best use analysis.

Intermontane: Among or between mountains.

Intrusions: A body of molten rock that penetrates older rock.

Krumholtz: A vegetation type occurring at alpine timberlines that is composed of tree species but in this environment are strongly dwarfed and misshapen.

Lacustrine: Pertaining to, formed in a lake or lakes.

Land Banking: The purpose of Land Banking as provided for under 77-2-361 and 77-2-362, MCA is to sell various parcels of state lands and use the proceeds from the sales to purchase other land, easements, or improvements for the benefit of the beneficiaries of the respective trusts.

Land Development: Adding improvements and/or entitlements to land in anticipation of a change in its use..

Land Exchange: The exchange of trust lands owned by other public or private entities for non-trust lands that better serve the interest of the trust.

Land Sale: The act of selling; the transfer of property, or a contract to transfer the ownership of property, from one person to another for a valuable consideration, or for a price in money.

Late-successional species: A plant species associated primarily with a later stage in the successional development of a biotic community.

Lease: An agreement by which an owner of real property (lessor) gives the right of possession to another (lessee), for a specified period of time (term) and for a specified consideration (rent).

Lease of Development Rights: The temporary conveyance of development rights on a parcel of property that result in the limitation of the types of development that can occur on the land for a set period of time.

License: A special permission to do something on, or with, somebody else's property which, were it not for the license, could be legally prevented or give rise to legal action in tort or trespass.

Limestone: A sedimentary rock composed primarily of calcium carbonate.

Market Filter: The process of selecting physically suitable land for development based on favorable demographic and economic characteristics. The function of the Market Filter is to determine the demand for specific tracts within a certain geographic, demographic or socio-economic context..

MEPA: The Montana Environmental Protection Act (MEPA), which requires the evaluation of potential impacts that occur as the result of an action undertaken or licensed by the State of Montana

Mesic temperature regime: Mean annual soil temperature between 46.5 and 59.0 °F and the difference between summer and winter temperatures is greater than 41 °F.

Metamorphic rock: Rocks which have formed in the solid state in response to pronounced changes in temperature, chemical and pressure environment.

Metalliferous: containing or yielding metal

Metasedimentary rock: Partially metamorphosed sedimentary rocks.

Montana Antiquities Act: The act addressing the responsibilities of the State Historic Preservation Office and other state agencies regarding historic and prehistoric sites including buildings, structures, paleontological sites, archaeological sites on state owned lands.

Montana Environmental Policy Act (MEPA): Adopted during the 1971 session of the State legislature, MEPA is patterned after the NEPA. MEPA establishes Montana's environmental policy, processes and the EQC (MCA 75-1-101 - 324).

Moraine: A drift of glacial till deposited by a glacier, independent of underlying topography.

Mudstone: a rock formed from an indefinite mixture of clay, silt, claystone, siltstone, shale and argillite.

National Environmental Policy Act (NEPA): The basic national charter for environmental protection. NEPA became law in 1969 and establishes policy, sets goals, and provides means for carrying out the policy (40 CFR 1500.1).

Neighborhood Plan: A set of goals, policies and recommended action measures for a specific area within a larger planning jurisdiction that become part of the Growth Policy. It is more specific than the Growth Policy, but it reinforces and complies with growth plan policies. These goals and policies will provide overall guidance to the development of new regulations that will be binding on future development in the neighborhood.

Net Present Value (NPV): Today's dollar equivalent of accumulated future revenues, over the analysis period, less accumulated future costs.

Non-metalliferous: does not contain or yield metal

Non-point pollution source: Pollution without a single, identifiable source, such as that from road construction, cattle grazing, or agricultural practices. (see Point pollution source)

Noxious Weed: Plants that conflict with, interfere with, or otherwise restrict land management are commonly referred to as weeds. A plant that has been classified as a weed attains "noxious" status by an act of State legislation.

Other: Land not characterized as Mineral, Timber, and Agriculture and Grazing.

Outwash: A plain composed of water washed out from under a glacier or ice sheet.

Physical Environmental Filter: The process of selecting developable land with slopes less than 25% and located outside a designated 100-year flood plain.

Physical Suitability Filter: The process of selective developable lands based on the proximity and availability of infrastructure.

Physiography: The study of the genesis and evolution of landforms.

Plant Species Names

alkali bluegrass Poa juncifolia

American ash Fraxinus pennsylvannia

American vetch Vicia americana

arrowleaf balsamroot Balsamorhiza saggitata

bearded wheatgrass Agropyron caninum

beardtounge Penstemon spp.
beargrass Xerophyllum tenax
big bluestem Andropogon gerardii

big sagebrush Artemisia tridentata birdfoot sagebrush Artemisia pedatifida

black cottonwood Populus balsamifera ssp. trichocarpa

black greasewood Atriplex gardneri
black sagebrush Artemisia arbuscula

blue gramma Bouteloua gracilis

bluebunch wheatgrass Pseudorogneria spicata

bluejoint reedgrass Calamogrostis canadensis

bog birch Betula glandulosa

boxelder Acer negundo

broom snakeweed Gutierrezia sarothrae bud sagebrush Artemisia spinescens

Canada buffaloberry Sheperdia canadensis

Cascade mountain ash Sorbus scopulina

cheatgrass Bromus tectorum

chokecherry Prunus virginiana

common snowberry Symphoriocarpos albus

common yarrow Achillea millefolium

creeping juniper Juniperus horizontalis

curl-leaf mountain mahogany Cercocarpus ledifolius

devil's club Oplopanax horridum

dotted gayfeather Liatris punctata

Douglas-fir Pseudotsuga menziesii

dryland bluegrass Poa arida

dwarf billberry Vaccinium caespitosum

elk sedge Carex geyeri

Engelmann spruce Picea engelmannii false indigo Amorpha canescens foamflower Tiarella unifoliata

fool's huckleberry Menziesia ferruginea

fringed sage Artemisia frigida
golden current Ribes odoratum
grand fir Abies grandis

Great Basin wildrye Elymus cinereus
Great Plains cottonwood Populus deltoides

green needlegrass Stipa viridula

green rabbitbrush Chrysothamnus viscidiflorus

ground dogwood Cornus unalaskense
grouse whortleberry Vaccinium scopulorum

hawthorne Crataegus spp.
heart-leaved arnica Arnica cordifolia
Hood's phlox Phlox hoodii

Hooker's fairybell
Disporum hookerii
Hooker's sandwort
Idaho fescue
Indian ricegrass
Disporum hookerii
Festuca idahoensis
Oryzopsis hymenoides

Japanese brome Bromus japonicus

Kentucky bluegrass Poa pratensis

kinnikinnik Arctostaphylos uva-ursi

limber pine Pinus flexilis

little bluestem Schizachrium scoparium

lodgepole pinePinus contortalungwortMertensia spp.lupineLupinus spp.Lyall's larchLarix lyallii

many-flowered phlox Phlox multiflora
mock orange Philadelphus lewsii

moss campion Silene acaulis
mountain avens Dryas octopetala
mountain balm Ceanothus velutinus
mountain hemlock Tsuga mertensiana
mountain lover Pachistima myrsinites

narrow-flowered brome Bromus vulgaris narrow-leaved sedge Carex filifolia needle and thread grass Stipa comata Pacific yew Taxus brevifolia paper birch Betula papyrifera patata Monolepis nuttalliana pathfinder Adenocaulon bicolor pinegrass Calamogrosits rubsens

plains cottonwood Populus deltoides

plum Prunus spp

ponderosa pine Pinus ponderosa porcupine grass Stipa spartea

prairie coneflower
prairie junegrass
prairie sandgrass
prickly pear cactus
purple meadowrue

Ratibida columnifera
Koeleria pyramidata
Calamovilfa longifolia
Opuntia polycantha
Thalictrum dasycarpum

pussy toes

queens cup

rattlegrass

Antennaria spp.

Clintonia unifoliata

Bromus brizaeformis

red threeawn

Aristida purpurea

redstem ceanothus Ceanothus sanguineus

redtop bentgrass Arostis stolonifera
Rocky Mountain helianthella Helianthella uniflora
Rocky Mountain juniper Juniperus scopulorum

Rocky Mountain maple Acer glabrum
Ross's sedge Carex Rossii

rosy pussytoes Antennaria microphylla

rough fescue Festuca scabrella

rubber rabbitbrush Chrysothamnus nauseosus
Russian olive Elaeagnus angustifolium

saltsage Atriplex nuttalli

sand dropseed Sporobolus cryptandrus

Sandberg's bluegrass Poa sandbergii

scarlet globemallow Sphaeralcea coccinea

Scouler's willow Salix scouleriana scurf pea Psoralea tenuifolia

sedge Carex spp.

serviceberry Amalanchier alnifolia sheepfat Atriplex confertifolia shiny-leaved spiraea Spiraea betulifolia

shreddy ninebark Physocarpus malvaceus

shrubby cinquefoil Potentilla fruiticosa (=Pentafloides floribunda)

silver sagebrush Artemisia cana

sticky geranium Geranium viscosissimum

Subalpine fir Abies lasiocarpa sweet-scented bedstraw Galium triflorum textile onion Allium textile

thickspike wheatgrass Agropyron dasystachum

thimbleberry Rubus parviflorus

thin-leaved blueberry Vaccinium membranaceum

three-leaved sage Artemisia tripartita

tufted hairgrass Deschampsia caespitosa

twinflower Linnaea borealis

Utah juniper Juniperus osteosperma

water birchBetula occidentalisWestern hemlockTsuga heterophyllaWestern larchLarix occidentalis

Western redcedar Thuja plicata

Western wheatgrass Agropyron smithii
Western white pine Pinus monticola

white spruce Picea engelmannii x glauca

whitebark pine Pinus albicaulis
wild sarsaparilla Aralia nudicaulis

willow Salix spp.

wingscale Atriplex canescens

winterfat Eurotia lanata

wolfberry Symphoricarpos occidentalis

Wood's rose Rosa woodsii yucca Yucca glauca

Polygon: A coverage feature class used to represent <u>areas</u>. A polygon is defined by the arcs that make up its boundary and a <u>point</u> inside its boundary for identification. Polygons have attributes (<u>PAT</u>) that describe the geographic feature they represent.

Potholes: A hole generally deeper than wide.

Point Pollution Source: Pollution with a single, identifiable source, such as a sewage pipe or factory waste system. (see Non-point pollution source).

Prevention of Significant Deterioration of Air Quality (PSD)- with the Clean Air Act amendments of 1977, Congress mandated that states and Indian tribes would establish preconstruction permitting programs designed to ensure that the National Ambient Air Quality Standards are maintained as economic development occurs. Standards for measurement of PSD values typically follow a standardized three-part classification system.

Project Filter: The process of obtaining project approval through local government review.

Purchase/Sale of Development Rights: The permanent conveyance of development rights on a parcel of property that result in a covenant on the land limiting the types of development that can occur.

Quantile: Quantiles are essentially points taken at regular vertical intervals from the cumulative distribution function, dividing ordered data into groups of essentially equal-sized data subsets. In the context of this report quartiles (4 equal size groups) were used, and the results were combined as follows: $1 = \langle 25\%, 2 = 25\% - 75\%, 3 = \rangle 75\%$

Quartzite: A granular metamorphic rock composed primarily of quartz.

Raster: A cellular data structure composed of rows and columns for storing images. Groups of cells with the same value represent features. See also grid.

Rate of Return on Equity: the percentage of income received from an investment

Regulatory Filter: The process of determining the "how" land use regulations and environmental laws would affect land use.

Residential: A proposed land use category that includes single-family dwellings, duplexes, condominiums, townhouses, cabins, apartments, associated ancillary uses, and other residential uses normally recognized by local zoning regulations. In addition, "raw" or undeveloped properties might also be identified for residential potential. Analyses in this PEIS included multi-family units in the commercial category, in some cases.

Resource Management Standard (RMS): A specific level of performance that characterizes how various issues and resources will be addressed. In this document, each alternative has its own set of RMSs consistent with its management philosophy.

Rhyolite: A granitic rock with crystals too small to be seen by the unaided eye.

Riparian area: Green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, fens, wet meadows, and ephemeral, intermittent or perennial streams. The riparian / wetland zone occurs between the upland or terrestrial zone and the aquatic or deep-water zone.

Rural: Concerning the country, lands not considered to be urban or suburban.

Saline, salinity: A measure of soluble salt accumulation.

Sandstone: Cemented sediment composed primarily from quartz.

Schist: A medium or coarse-grained metamorphic rock where mica minerals form parallel bands.

Scoping: An integral part of the environmental analysis. Scoping requires examining a proposed action and its possible effects; establishing the depth of the environmental analysis needed; determining analysis procedures, data needed and task assignments.

Selection Filter: The process of prioritizing project opportunities based upon fiscal and staffing considerations in addition to perceived market demand for the proposed project.

Sensitive species: A U.S. Forest Service designation for plant or animal species that are vulnerable to declines in population or habitat capability which could be accelerated by land management activities.

Seral: A community susceptible to replacement by another community.

Serotinous: Conifer cones that do not open after the seeds are matured unless heated by fire.

Shale: A sedimentary rock formed from fine textured layered soils.

Siltite: A metamorphosed siltstone.

Special Uses: Commercial, residential, industrial, and conservation use of state lands.

Species of Special Concern: A Montana Natural Heritage Program designation for species which may be very rate or locally abundant but occupying a very restricted range. In either case, they are especially vulnerable to extinction.

Subdivision: A division of a single parcel of land into smaller parcels (lots) by filing a map describing the division, and obtaining approval by a governmental commission (city or county).

Substrata: An underlayer.

Suburban: The area around a city, a transition area between urban and rural, usually residential with small businesses, although modernly an attraction for large industrial and commercial complexes.

Sustained Yield: Management of timber resources to provide sustainable, consistent yields of timber and/or other resources.

Thiessen Polygons: Polygons whose boundaries define the area that is closest to each point relative to all other points. Thiessen polygons are generated from a set of points. They are mathematically defined by the perpendicular bisectors of the lines between all points. A tin structure is used to create Thiessen polygons.

Threatened Species: Species which are likely to become "endangered species" within the foreseeable future through all or a significant portion of their range are designated threatened species in the Federal Register by appropriate Department Secretaries. (Schwarz et al. 1976)

Thrust and block faulted: A reverse fault characterized by a low angle of inclination.

Transfer of Developmental Rights: Land rights associated with a certain parcel, such as land use density, could be transferred to another parcel to accomplish a variety of objectives.

Transitional Filter: The process of selecting lands that have some development potential for residential, commercial, and industrial uses based on proximity to existing land uses.

Trust Mandate: The requirement that State trust lands be managed to provide income for the beneficiaries of the income derived from those lands, including public schools and universities,

Urban: Pertaining to a city or town, a named location where a mix of different developed uses occurs in close proximity to each other.

Ustic soil moisture regime: A condition where moisture is limited but present when condition are suitable for plant growth.

Watershed: The area drained by a river or river system.

Wetlands: Areas that are permanently wet, or intermittently water covered, such as swamps, marshes, bogs, muskegs, potholes, swales, glades, and overflow land of river valleys. Large, open lakes are commonly excluded, but many kinds of ponds, pools, sloughs, holes, and bayous may be included. (Veatch and Humphrys 1966 In: Schwarz et al. 1796)

Xeric temperature regime: Climatic conditions typical of Mediterranean areas where winters are moist and summers are warm and dry.

Zoning: A regulatory tool that enables local government to locate compatible and/or complimentary land uses within specific geographic areas while addressing a number of design, safety and infrastructure issues. It also can be used to achieve other community goals such as the provision of affordable housing, the preservation of significant cultural and historic resources and the efficient provision of community services and infrastructure.

